

REMARKS

Claims 1-6 have been rejected by the Examiner under 35 U.S.C. § 102(b) as being anticipated by Hackleman, U.S. Patent 5,640,183. This rejection is respectfully traversed.

The present invention is directed to a method and apparatus for printing a substrate with an ink jet printing device comprising a first printing stage in which a strip of pixel rows is provided with ink drops, whereafter the print head is displayed in a direction substantially parallel to the pixel columns, and a second printing stage in which the strip is provided with supplemental ink drops, wherein the print head is displayed over a distance which is not selected from a plurality of distances but which is a fixed distance such that the same is always substantially equal to the width of one pixel row.

According to the present invention, it has been found that the negative effect on printing results induced by distributed faulty nozzles can be more adequately masked by applying a fixed displacement of the print head instead of using a displacement that has to be chosen from each subsequent print swath. Thus, in the method and apparatus of the present invention, the distance over which the print head is displayed before the next print swath is made, is not selected out of a plurality of distances but is a fixed distance that is determined, that is predetermined even before the printing starts.

It is believed that the Examiner is wrongly interpreting the teachings of the Hackleman patent which is apparent from the Examiner's response to our previous arguments submitted to the U.S. Patent & Trademark Office on March

15, 2004. In the Examiner's Office Action, in the paragraph entitled "Response to Argument", the Examiner states that the Hackleman patent defines displacement (paper drive) that is fixed when a swath is printed in a normal mode (i.e., zero offset) or to have an offset by "n" dots. The Examiner then states that the offset remains to be fixed "swath after swath" with the choice selected to complete the page as necessary. Apparently, the Examiner assumes that in the non-random mode, the offset remains fixed, "swath after swath", when completing a page. However, this is not the case. If this would be true, this would automatically mean that the same set of nozzles is used to print adjacent swaths. However, the Hackleman patent leaves no doubt that this is not the case. Please see for example, the Abstract of the Disclosure of the Hackleman patent which states that: "In operation, the printhead is shifted regularly or pseudo-randomly such that a different set of nozzles print adjacent swaths". Thus, it is clear that the Hackleman patent teaches to select a new set of nozzles after each print swath, not only when the shift is random, but also when the shift is non-random, that is, regular. This is expressed very explicitly by the Hackleman patent in column 5, lines 11-15 where it is stated that "in order to minimize the effect that any defective nozzle may have on the printed image, the offset for each swath is decided upon 603". The methodology for offset selection may be non-random, for example, offset = 0, 1, 2, 3, 0, 1, 2, 3, 0, 1... or pseudo-randomly selected.

To one skilled in the art, the discussion in the Hackleman patent as set forth hereinabove, leaves no doubt that in the random mode as well in the non-random mode, for each swath, a new selection for the offset is made.

As is apparent from the Examiner's rejection, the Examiner understands from the Hackleman patent that there are two options for shifting:

1. randomly, for every swath a new offset is selected for the shift,
2. non-randomly, for every swath in a page, the same offset is used, being either 0 or 1 or 2, etc.

This explains the Examiner's position, but given the explanation provided hereinabove, it is clear that the Examiner's understanding is incorrect. The meaning of a non-random shift is that the shift is altered between swath via a regular series. Proof for this is given in column 5, where an example is given of a non-random selection for the offset: 0, 1, 2, 3, 0, 1, 2, 3, 0, 1, etc. If the Hackleman patent intended that the non-random shift was a fixed shift, being either always 0 or always 1 or always 2 or always 3, then the patentee would clearly not have given the repeating progression in line 14 of column 5, but would have given only the choices 0, 1, 2, 3, ... n etc., without any kind of repetition (like the Examiner does in his interpretation of Hackleman on page 3, line 5 of the Office Action). Accordingly, to one skilled in the art it is absolutely clear that the Hackleman patent teaches to make a new selection for the offset after every swath, wherein the selection is chosen either randomly or non-randomly. This is in complete contrast with the present invention wherein the offset for every second swath is a fixed offset.

Accordingly, in view of the above remarks, reconsideration of the rejection and allowance of the claims of the present application are respectfully requested.


CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. Joseph A. Kolasch (Reg. No. 22,463) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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